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(54) Title: RECOGNITION OF DIFFERENCES IN CELL CYCLE STRUCTURE BETWEEN STEM AND DIFFERENTIATED CELLS

(57) Abstract: The invention resides in the recognition of differences in cell cycle structure between stem and differentiated cells. Pluripotent cells spend ~65 % of time in S phase, ~15 % in G1 and ~20 % in M. Partially differentiated cells have a different cell cycle structure, e.g. mesoderm spend 15-20 % of time in S phase, and 60 % in G1. These differences in cell cycle have lead to the identification of differences in expression of cell cycle genes and activity of regulators. The claims are directed to manipulating cell cycles genes, regulators and proteins to regulate cell activity or cells cycle, identify cell types, facilitate maintenance, reprogramme cells, or regulate differentiation.